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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/879,043	06/13/2001	Kazuhiko Oda	209543US0	3558

22850 7590 06/23/2005

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EXAMINER	
LAM, CATHY FONG FONG	

ART UNIT	PAPER NUMBER
1775	

DATE MAILED: 06/23/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/879,043	ODA ET AL.	
	Examiner	Art Unit	
	Cathy Lam	1775	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *the amendment filed on April 19, 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *23-37,39-41 and 71-82* is/are pending in the application.

4a) Of the above claim(s) *23-37 and 39-41* is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *71-82* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *13 June 2001* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

In view of the amendment and remarks filed on April 19th 2005, the pending claims are continued to be unpatentable as following:

Election/Restrictions

1. This application contains claims 23-37 & 29-41 drawn to an invention nonelected with traverse in paper filed April 19th 2005. A complete reply to the final rejection must include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 102

2. Claims 71-80 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shoji et al (US 4552691).

Shoji discloses an electrically conductive paste comprised of 60-90 wt% of metal or metal compound particles and a solvent (col 3 L 43-46).

The metal particles are dispersed into the solvent through using of a surfactant (col 3 L 26-28, L 34-36). The metal particles have an average particle size of 0.5-5.0 μm (col 2 L 45-47).

Shoji states that the surfactant is added to improve the dispersibility of the metal particles (col 3 L 35-36). Shoji implicitly stated the amount of the vehicle (or organic solvent) (col 3 L 58-65).

The examiner takes the position that surface active agent is a surfactant, for it is well known to be used to improve particles dispersibility. The examiner also takes the position that with the presence of surfactant, the metal particles are taken as undried particles when mixing with the solvent.

Applicant in the present invention washes the metal particles with water and leave the metal particles undried then mixing with the organic solvent, the water in this case acts as a surfactant, for improving dispersibility.

3. Claims 71-82 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shoji et al (US 4552691).

Shoji discloses a conductive paste that is used to form conductive pattern on a ceramic substrate. The conductive paste is comprised of metal and metal compound particles, surfactant, organic solvents and organic binder (col 5 L 12-26).

The metal particles are dispersed into an organic solvent through the use of surfactant, followed by mixing with a vehicle component which comprises two solvents (ie. terpineol and butyl-carbitol) and an organic binder (or organic component) (ie. ethylcellulose) (col 5 L 23-26).

The examiner takes the position that the water remains on the metal particles' surface is the surfactant, which improves dispersibility.

4. Claims 71-73, 77-78 and 81 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Burn (US 4766927).

Burn also discloses a conductive paste comprised of metal particles, a solvent, and a surfactant. The conductive paste is used to form electrodes on a ceramic structure.

The metal particles have a size of about 1μm. The surfactant is used to improve dispersibility of the metal particles (col 5 L 35-39).

The conductive paste has a metal loading of 55 wt% and 45 wt % of organic medium which comprised of a resin binder (or organic component) and a solvent (col 9 L 21-25).

The solvent is a terpineol and the binder is n-butyl methacrylate polymer (col 5 L 36-37). The examiner takes the position that the water remains on the metal particles' surface acts as a surfactant.

5. Claims 74-76, 79-80 and 82 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Burn (US 4766927).

Burn discloses a conductive paste which is used to make electrodes in a ceramic structure. Burn teaches copper particles but silent about using metal compound particles.

One skill in the art would choose a desired material for the metal powders in the conductive paste because a metal compound is an obvious variant of a pure metal.

Response to Arguments

6. The arguments raised in the remarks filed on April 19th 2005 have been fully considered but not persuasive. The prior art of record continue to meet the present invention, thus the previous art rejections sustained.

Conclusion

7. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within

TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cathy Lam whose telephone number is (571) 272-1538. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Cathy Lam

Cathy Lam
Primary Examiner
Art Unit 1775

cfl
January 24, 2005

In view of the amendment and remarks filed on April 19th 2005, the pending claims are continued to be unpatentable as following:

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2. Claims 71-80 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Shoji et al (US 4552691).

Shoji discloses an electrically conductive paste comprised of 60-90 wt% of metal or metal compound particles and a solvent[1] (col 3 L 43-46).

The metal particles are dispersed into the solvent through using of a surfactant (col 3 L 26-28, L 34-36). The metal particles have an average particle size of 0.5-5.0 μm (col 2 L 45-47).

Shoji states that the surfactant is added to improve the dispersibility of the metal particles (col 3 L 35-36). Shoji implicitly stated the amount of the vehicle (or organic solvent) (col 3 L 58-65).

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[1] US patent 6,551,527 discloses a conductive paste mainly comprises a conductive powder, an organic binder and a solvent (col 2 L 43-45). Solvent includes organic solvent and water (col 3 L 6-16).

The examiner takes the position that surface active agent is a surfactant, for it is well known to be used to improve particles dispersibility. The examiner also takes the position that with the presence of surfactant, the metal particles are taken as undried particles when mixing with the solvent.

Applicant in the present invention washes the metal particles with water and leave the metal particles undried then mixing with the organic solvent, the water in this case acts as a surfactant, for improving dispersibility.

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